

CLAIMS

1. A method for operating a windmill where a primary generator is driven by the windmill rotor, possibly by a gear mechanism, with constant or approximately constant rpm, characterised in that between the rotor of the windmill and the primary generator there is disposed an apparatus comprising a slip generator and a frequency converter or resistor adapted thereto, and which may transmit the torque to the primary generator with a certain amount of slip, and where the power coming from the slip may be regenerated to the electric network via the slip generator and the frequency converter or may be deposited via the resistor as heat at an optional location.
2. A method according to claim 1, characterised in that the torque in the apparatus is regulated in such a way that the total power output from the windmill is kept constant over a certain range of slip.
3. A method according to claim 1 or 2, characterised in that the apparatus is operated both as motor and as generator.
4. A method according to any of the preceding claims, characterised in that the power coming from the slip between the windmill rotor and the primary generator is delivered to the electric network by the frequency converter.
5. A method according to any of the preceding claims, characterised in that the slip between the windmill rotor and the primary generator has magnitude from -50 % to +50 %.
6. A method according to claim 4, characterised in that the frequency converter of the apparatus is temporarily disconnected from the apparatus and is used by synchronising the primary generator to the electric network.
7. A method according to any of claims 1-3, characterised in that the resistor is used in designs with little slip for preventing torsion oscillations and the like.

8. A windmill where a primary generator is driven by the rotor of the windmill, possibly with a gear mechanism, with constant or approximately constant rpm, characterised in that between the rotor and the primary generator there is disposed an apparatus comprising a slip generator and the frequency converter or resistor adapted thereto, and which may transmit the torque to the primary generator with a certain amount of slip, and where the power coming from the slip may be regenerated the electric network via the slip generator and the frequency converter or may be deposited via the resistor as heat at an optional location.

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9. A windmill according to claim 8, characterised in that the apparatus is a synchronous generator mounted on the shaft of the primary generator.

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10. A windmill according to claim 8 or 9, characterised in that the apparatus is arranged so that it may function either as motor, as generator, or both as motor and generator.

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